

## ABSTRACT OF THE DISCLOSURE

An apparatus and method for determining properties of a conductive film is disclosed. A plurality of probe locations selected around a periphery of the conductive film define a plurality of measurement lines between each probe location and all other probe locations. Electrical resistance may be measured along each of the measurement lines. A lumped parameter model may be developed based on the measured values of electrical resistance. The lumped parameter model may be used to estimate resistivity at one or more selected locations encompassed by the plurality of probe locations. The resistivity may be extrapolated to other physical properties if the conductive film includes a correlation between resistivity and the other physical properties. A profile of the conductive film may be developed by determining resistivity at a plurality of locations. The conductive film may be applied to a structure such that resistivity may be estimated and profiled for the structure's surface.

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